**UNIVERSITY OF CALGARY** | VP SERVICES | Environment, Health and Safety

**Field Safety Hazard Control Library**

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# FIELD SAFETY HAZARD AND CONTROL LIBRARY

This library is intended to prompt discussion about tasks, existing and potential hazards, and controls to mitigate those hazards.

Some examples of tasks, hazards and controls have been provided; however, this library is not all inclusive and supervisors are expected to add additional details specific to their field activities and travels.

Controls highlighted in blue are considered mandatory and must be included if the associated task is included in the hazard assessment.

Consider people, equipment, materials, processes, and the environment when identifying tasks and hazards. Identify and implement engineering (EMG), administrative (ADM) or personal protective equipment (PPE) controls to help reduce the probability or severity of identified hazards.

# WORKING WITH EQUIPMENT

|  |  |  |  |
| --- | --- | --- | --- |
| **Equipment** | **Hazards** | **Controls** | **Source** |
| **Drones and Unmanned Aerial Vehicles** | UC requirements  Legal and legislative requirements | ADM: Drone approval  ADM: Drone pilot certificate  ADM: Transport Canada UAV regulations | RMI  RMI  Transport Canada |
| Entering restricted air space  Damage to environment  Spooking wildlife | ADM: Transport Canada UAV regulations | Transport Canada |
| Injury to operator | ADM: Training  ADM: Safe Operating Procedure | Supervisor  Supervisor |
| Damage to equipment | ADM: Must report damage to RMI  ADM: Complete a level 1 OARs report  ADM: Manufacturer specifications  ADM: Inspection and maintenance | RMI  Supervisor  Supervisor |
| Other: specify |  |  |
| **Firearms** | Legal and legislative requirements  UC Requirements | ADM: Firearms Acquisition/Possession Licence  ADM: Firearms Training  ADM: Contact Campus Security | Government of Canada  Campus Security |
| Damage to equipment  Stolen equipment | ADM: Transport in secure manner with trigger lock  ADM: Store in locked, approved storage only |  |
| Accidental discharge  Injury to self or others | ADM: Hire a qualified local guide  ADM: Practice safe handling  ADM: Ensure chamber is empty and safety is on when not in use |  |
| **Specialized Research Equipment** | UC requirements | ADM: Contact RMI regarding insurance | RMI |
| Damage to equipment  Injury to self or others | ENG: Use all built in safety devices (ex: guard)  ADM: Safe Operating Procedure  PPE: If required – specify: |  |
| Equipment failure | ADM: Manufacturer specifications ADM: Maintenance and inspection |  |
| **Cranes, Hoists, Lifting Devices** | UC Requirements | ADM: Cranes, Hoists, and Lifting Devices Program  ADM: Powered Mobile Equipment Program | EHS  EHS |
| Damage to property and equipment  Injury to self or others | ADM: Overhead Powerlines Program  ADM:” Overhead Crane Course- approved vendor - #KEL-CT101 -Kristian Electric LTD.  ADM: Aerial Work Platform and Self-Propelled Elevated Work Platform (Boom Lift) Training- approved vendor – AIP-Accident Injury Prevention | EHS  EHS  EHS |
| Equipment failure | ADM: Manufacturer specifications  ADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Hazardous Energy** | UC Requirements | ADM: Control of Hazardous Energy Program  ADM: Lock out/tag out procedures  ADM: Lock out/tag out training | EHS  EHS  EHS |
| Shock, electrocution | PPE: Non-conductive footwear |  |
| Contact with overhead power lines or underground utilities  Damage to property  Injury to self or others | ADM: Overhead Powerlines Program  ADM: Utilities locate  ADM: Safe limit of approach distance  ADM: Signage, taglines | EHS  EHS  Supervisor  Supervisor |
| Other: specify |  |  |
| **Sharps** | Injury to self and others | ADM: Safe Operating Procedure  PPE: Cut resistant gloves |  |
| Accidental injection or exposure | ADM: Post exposure protocol | EHS |
| Other: specify |  |  |
| **Welding** | Injury to self | ADM: Training  PPE: Welder’s helmet, heat resistant gloves, heat /flame resistant chaps |  |
| Injury to others | ENG: Screen or physical and visual separation |  |
| Damage to property or equipment | ADM: Safe Operating Procedures  ADM: Manufacturer specifications  ADM: Maintenance and inspection |  |
| fire | ENG: Fire extinguisher on site ADM: Fire extinguisher training | EHS |
| Other: specify |  |  |
| **Chainsaws** | Injury to self | ADM: Training – approved vendor- Chainsaw Awareness Level 1 training – Hayes Safety Training  ADM: Hearing Conservation Program  ADM: Hearing Conservation Training  PPE: Hearing protection, safety eyewear, helmet with face shield, cut resistant gloves, cut resistant chaps, safety boots | EHS  EHS  EHS  Supervisor |
| Damage to property or equipment | ADM: Manufacturer specifications  ADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Air Pressure Tools** | Injury to self | ADM: Hearing Conservation Program  ADM: Hearing Conservation Training  PPE: Hearing protection, safety eyewear | EHS  EHS  EHS |
| Damage to property or equipment  Injury to others | ADM: Safe Operating Procedure  ADM: Manufacturer specifications  ADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Power Tools** | Injury to self | ADM: Hearing Conservation Program  ADM: Hearing Conservation Training  PPE: Hearing protection, safety eyewear | EHS  EHS  EHS |
| Damage to property or equipment  Injury to others | ADM: Safe Operating Procedure  ADM: Manufacturer specifications  ADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Hand Tools** | Injury to self | ADM: Safe Operating Procedure  ADM: Pre-use inspection  PPE: Specify |  |
| **Other: Specify** |  |  |  |

# WORKING WITH MATERIALS

|  |  |  |  |
| --- | --- | --- | --- |
| **Material** | **Hazards** | **Controls** | **Source** |
| **Explosives / Pyrotechnics** | UC requirements | ADM: Pyrotechnic Special Effects Manual, April 2014 - Third Edition (Natural Resources Canada) | EHS |
| Injury to self | ADM: Hearing Conservation Program  ADM: Hearing Conservation Training PPE: Hearing protection, safety eyewear, heat resistant gloves, other: specify | EHS  EHS  Supervisor |
| Injury to others  Damage to equipment or property | ADM: Safe operating procedures  ADM: Training, competency, supervision  ADM: Manufacturer specifications |  |
| Fire | ENG: Fire extinguisher  ENG: Fire extinguisher training | EHS |
| Other: specify |  |  |
| **Working with open flames or work that produces heat or sparks** | Fire  Damage to property or equipment | ENG: Fire extinguisher  ENG: Fire extinguisher training  ADM: Permit  ADM: Hot Works and Dust Program  PPE: Flame resistant/retardant clothing | Supervisor  EHS  EHS  EHS  Supervisor |
| Other: specify |  |  |
| **Working with Chemicals** | General chemical hazards | ADM: WHMIS 2015  ADM: WHMIS 15 training  ADM: Safety Data Sheet (SDS)  ADM: Lab Safety Manual (relevant sections)  ADM: Laboratory Safety Training  ADM: Standard Operating Procedure (SOP) using template | EHS  EHS  EHS  EHS  EHS  EHS  EHS |
| Injury to self (absorption, inhalation, ingestion, etc.) specify | ENG: Ventilation (outdoors, fume hood, snorkel, etc.) specify  ADM: Training  PPE: Specify |  |
| Transportation of chemicals | ADM: TDG regulations  ADM: TDG training  ADM: Ship to site (courier)  ADM: Query how materials could be transported | Transport Canada  EHS |
| Other: specify |  |  |
| **Working with Biologicals** | General biological hazards | ADM: Pathogen Safety Data Sheet (PSDS)  ADM: Biosafety Manual (relevant sections)  ADM: Biosafety Training  ADM: Standard Operating Procedure (SOP) using template  ADM: Contact biosafety.officer@ucalgary.ca | EHS  EHS  EHS  EHS  Biosafety Officer |
| Exposure or contamination | ADM: Post exposure protocol |  |
| Transportation of biological materials | ADM: TDG regulations  ADM: TDG training  ADM: Hip to site (courier)  ADM: Query how materials could be transported | Transport Canada  EHS |
| Other: specify |  |  |
| **Working with Radiation (radioisotopes, x-ray, lasers)** | General radiation hazards | ADM: Radiation, X-Ray, Laser Safety Manual (relevant sections)  ADM: Radiation, x-ray, Laser Safety Training (relevant)  ADM: Standard Operating Procedure (SOP) using template  ADM: Contact radsafe@ucalgary.ca | EHS  EHS  EHS  EHS  Rad Safety Officer |
| Injury to self | PPE: Specify |  |
| Transportation of radioactive materials | ADM: TDG regulations  ADM: TDG training  ADM: Ship to site (courier)  ADM: Query how materials could be transported | Transport Canada  EHS |
| Other: specify |  |  |
| **Working with other materials: specify** | Specify: |  |  |

# TRANSPORTATION – DRIVING OR OPERATION OF VEHICLES, WATER VESSELS, AIRCRAFT, ETC.

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Driving -general** | Road condition, road closures, detours, construction  weather conditions | ADM: Drive according to conditions  ADM: Consult road closure advisories prior to departure, plan route accordingly  ADM: Journey management plan  ADM: Monitor weather reports  ADM: Snow tires  ADM: Check fluid levels prior to departure  ADM: Emergency roadside safety kit  PPE: Wear sunglasses |  |
| Vehicle traffic, pedestrian traffic  Wildlife on road | ADM: Follow all traffic signs  ADM: Follow all speed limits, slow down if necessary  ADM: Be aware of surroundings  ADM: Avoid driving at night |  |
| Injury to self or others  Motor vehicle accident  Damage to property or equipment | ENG: Wear seat belt  ADM: Vehicle Safety Standard  ADM: First aid kit  ADM: Fire extinguisher  ADM: Follow incident reporting instructions  ADM: Insurance |  |
| Vehicle breakdown | ADM: Vehicle Safety Standard  ADM: Pre-trip inspection (logbook)  ADM: Emergency roadside toolkit  ADM: Emergency roadside assistance provider  ADM: Regular maintenance and inspection  ADM: Manufacturer specifications and trouble shooting guide |  |
| Other: specify |  |  |
| **Driving on University Business in North America** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirements  ADM: Must comply with Renting Vehicles while Traveling requirements  ADM: Must comply with Fleet Drivers Handbook requirements | EHS  RMI  FM- Fleet |
| **Driving on University Business in International Locations outside of North America (rental vehicles)** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirements  ADM: Must comply with Renting Vehicles while Traveling requirements | EHS  RMI |
| **Driving 12+ Passenger Van** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirements  ADM: Must comply with Renting Vehicles while Traveling requirements  ADM: Must comply with Fleet Drivers Handbook requirements  ADM: Must contact RMI | EHS  RMI  FM-Fleet  RMI |
| **Driving Motorcycle or Scooter** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirements  ADM: Must comply with Renting Vehicles while Traveling requirements  ADM: Must contact RMI  PPE: DOT approved helmet | EHS  RMI  RMI |
| **Driving and Towing a Trailer** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirements  ADM: Must comply with Renting Vehicles while Traveling requirements  ADM: Must comply with Fleet Drivers Handbook requirements | EHS  RMI  FM-Fleet |
|  | Poor control  Poor visibility | ENG: Appropriate side mirrors to provide line of site  ADM: Pre-trip inspection to check for signal light function  ADM: Training, competency  ADM: Slowdown |  |
| **Operating off-Road Vehicles (ATVs, UTVs, etc.)** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirements  ADM: Must comply with Fleet Drivers Handbook requirements  ADM: Contact RMI | EHS  FM-Fleet  RMI |
| Injury | ENG: Roll bars  ADM: Training, competency  ADM: Safety kit  PPE: DOT approved helmet |  |
| Damage to environment | ADM: Implement environmentally safe riding practices  ADM: Reduce speed |  |
| breakdown | ADM: Inspection and maintenance  ADM: Manufacturer specifications and trouble shooting guide  ADM: Tool and repair kit |  |
| Other: specify |  |  |
| **Operating Snowmobiles** | UC Requirements | ADM: Contact RMI | RMI |
| Injury to self  Injury to others | ADM: Training, competency  ADM: Safety kit  ADM: Dress appropriate for weather  PPE: DOT approved helmet |  |
| Damage to environment | ADM: Implement environmentally safe riding practices  ADM: Reduce speed |  |
| breakdown | ADM: Inspection and maintenance  ADM: Manufacturer specifications and trouble shooting guide  ADM: Tool and repair kit |  |
| Other: specify |  |  |
| **Operating Motorized Watercraft (motorboats, sea-doos, etc.) - specify** | UC Requirements | ADM: contact RMI  ADM: Operator’s licence | RMI |
| Injury  drowning | ADM: Training, competency  ADM: Swimming skills assessment  PPE: Personal floatation device |  |
| breakdown | ADM: Inspection and maintenance  ADM: Manufacturer specifications and trouble shooting guide  ADM: Tool and repair kit |  |
| Other: Specify |  |  |
| **Operating Non-motorized Watercraft (sailboats, canoes, kayaks, paddleboards, etc.)- specify** | UC Requirements | ADM: Contact RMI | RMI |
| Injury  drowning | ADM: Training, competency  ADM: Swimming skills assessment  PPE: Personal floatation device | RMI |
| Other: specify |  |  |
| **Operating aircraft** | UC Requirements | ADM: Contact RMI  ADM: Pilot licence | RMI |
| accident | ADM: Training, competency  Other: Specify |  |
| Other: specify |  |  |
| **Other: Specify** |  |  |  |

# TRANSPORTATION – CONTRACTED COMMERCIAL OR CHARTER TRANSPORTATION SERVICES

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Travel by Charter Bus, Motor Coach, or School Bus** | UC Requirements | ADM: Use preferred vendor approved by Supply Chain Management for travel within North America  ADM: Use of International SOS online form to identify pre-screened ground transportation for international locations  ADM: International destinations must register in the travel registry | SCM  RMI  RMI |
| Missing or lost person  Missed connection | ADM: Use attendance checklist during boarding  ADM: Travel as a group  ADM: Use buddy system if separated from group  ADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Train** | UC Requirements | ADM: Use preferred vendor approved by Supply Chain Management  ADM: Use of International SOS online form to identify pre-screened ground transportation for international locations  ADM: International destinations must register in the travel registry | SCM  RMI  RMI |
| Missing or lost person  Missed connection | ADM: Use attendance checklist during boarding  ADM: Travel as a group  ADM: Use buddy system if separated from group  ADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Commercial Airplane** | UC Requirements | ADM: Use preferred vendor approved by Supply Chain Management  ADM: International destinations must register in the travel registry | SCM  RMI |
| Missing or lost person  Missed connection | ADM: Use attendance checklist during boarding  ADM: Travel as a group  ADM: Use buddy system if separated from group  ADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Charter Airplane or Helicopter** | UC Requirements | ADM: Contact RMI (insurance)  ADM: Contact SCM (contract)  ADM: Contact EHS (hazard assessment)  ADM: Register in the travel registry | RMI  SCM  EHS  RMI |
| Missing or lost person  Missed connection | ADM: Use attendance checklist during boarding  ADM: Travel as a group  ADM: Use buddy system if separated from group  ADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Charter Watercraft** | UC Requirements | ADM: Contact RMI (insurance)  ADM: Contact SCM (contract)  ADM: Contact EHS (hazard assessment)  ADM: Register in the travel registry | RMI  SCM  EHS  RMI |
| Missing or lost person  Missed connection | ADM: Use attendance checklist during boarding  ADM: Travel as a group  ADM: Use buddy system if separated from group  ADM: Journey management plan |  |
| drowning | ENG: Lifeboat, buoy, rescue equipment  ADM: Swimming assessment, competency  PPE: Personal floatation device |  |
| Other: specify |  |  |

# DESTINATION OR LOCATION RELATED HAZARDS

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Location** | **Hazards** | **Controls** | **Source** |
| **All Destinations** | Current events | ADM: Check communities advisories for political events, weather events, health advisories, active incidents, etc. which may impact health and safety  ADM: FLHA  ADM: Meeting with all participants daily to review new hazards | Supervisor  EHS  Supervisor |
| **All International locations** | UC Requirements | ADM: Register travel with travel registry  ADM: Follow RMI international Program requirements  ADM: Follow Global Learning programming and procedures  ADM: International Travel Policy  ADM: International Travel Procedure  ADM: Contact RMI regarding loaner device to ensure data security | RMI  RMI  GL  RMI  RMI  RMI |
| **Controlled Activity Sites under Another Authority**  Research Field Stations, Universities, Schools, Community Facilities, etc. | UC Requirements | ADM: Site specific orientation including emergency response procedures to be provided upon arrival  ADM: Review site specific website guidance for visitors | Supervisor  Supervisor |
| Weather related hazards | ADM: Dress appropriately for weather  ADM: Monitor weather- provide specific website | Supervisor  Supervisor |
| Vehicle and pedestrian traffic | ADM: Follow all posted traffic related postings  ADM: Be aware of surroundings |  |
| Getting lost | ADM: Travel as a group  ADM: Use a buddy system when separated from main group |  |
| Terrain related hazards | ADM: Be aware of surroundings  PPE: Wear appropriate footwear |  |
| Other: specify |  |  |
| **Urban Area**  An incorporated City, Town or Village | Weather related hazards | ADM: Dress appropriately for weather  ADM: Monitor weather- provide specific website | Supervisor  Supervisor |
| Vehicle and pedestrian traffic | ADM: Follow all posted traffic related postings  ADM: Be aware of surroundings |  |
| Getting lost | ADM: Travel as a group  ADM: Use a buddy system when separated from main group |  |
| Interactions with strangers | ADM: Be respectful and courteous  ADM: Travel as a group  ADM: Use a buddy system when separated from main group |  |
| Other: specify |  |  |
| **Isolated Location**  (a) a site that is located over 350 km from the nearest population centre with conventional services and year-round road access.  (b) a settlement that has regular air service and reliable telephone service but no year-round road access, and  c) for the purpose of determining first aid requirements, an Indigenous, Inuit or Métis settlement where conventional services may not be reliable or available. | UC Requirements | ADM: Field Safety Training  ADM: Register in travel registry | EHS  RMI |
| Weather related hazards | ADM: Dress appropriately for weather  ADM: Monitor weather- provide specific website | Supervisor  Supervisor |
| Wildlife related hazards | ADM: Refer to Unintended Wildlife Encounter Risk Matrix for guidance  ADM: Carry bear spray  ADM: Work in groups of 2 or more | EHS |
| Terrain related hazards | ADM: Be aware of surroundings  PPE: Wear appropriate footwear |  |
| Vehicle and pedestrian traffic | ADM: Follow all posted traffic related postings  ADM: Be aware of surroundings |  |
| Getting lost | ENG: Use a GPS enabled device  ADM: Training on GPS enabled device  ADM: Travel as a group  ADM: Use a buddy system when separated from main group  ADM: Communication plan |  |
| Interactions with strangers | ADM: Be respectful and courteous  ADM: Travel as a group  ADM: Use a buddy system when separated from main group |  |
| Other: specify |  |  |
| **Remote Locations**  a site that:  (a) is 80 kms or more from la settlement or community with a population of 1,000 or more;  (b) that lacks transportation and communication links that are typical in more populated areas; and (c) may be located on grazing and ranch lands. | UC Requirements | ADM: Field Safety Training | EHS |
| Weather related hazards | ADM: Dress appropriately for weather  ADM: Monitor weather- provide specific website | Supervisor  Supervisor |
| Getting lost | ENG: Use a GPS enabled device  ADM: Training on GPS enabled device  ADM: Travel as a group  ADM: Use a buddy system when separated from main group  ADM: Communication plan |  |
| Wildlife related hazards | ADM: Refer to Unintended Wildlife Encounter Risk Matrix for guidance  ADM: Carry bear spray  ADM: Work in groups of 2 or more |  |
| Terrain related hazards | ADM: Be aware of surroundings  PPE: Wear appropriate footwear |  |
| Other: specify |  |  |
| **Wilderness Locations**  (a) an area that has not been subject to significant human development activity;  (b) rural areas that are not under agricultural cultivation; and  (c) marine environments. | UC Requirements | ADM: Field Safety Training  ADM: Register in trave; registry using GPS coordinates | EHS  RMI |
| Weather related hazards | ADM: Dress appropriately for weather  ADM: Monitor weather- provide specific website | Supervisor  Supervisor |
| Getting lost | ENG: Use a GPS enabled device  ADM: Training on GPS enabled device  ADM: Travel as a group  ADM: Use a buddy system when separated from main group  ADM: Communication plan |  |
| Wildlife related hazards | ADM: Refer to Unintended Wildlife Encounter Risk Matrix for guidance  ADM: Carry bear spray  ADM: Work in groups of 2 or more |  |
| Terrain related hazards | ADM: Be aware of surroundings  PPE: Wear appropriate footwear |  |
| Other: specify |  |  |
| **Extreme Locations**  Volcano, glacier, ocean, etc.  Be specific | UC Requirements | ADM: Contact RMI (insurance)  ADM: Contact EHS (hazard assessment)  ADM: Location specific training and competency requirements)  ADM: Register with travel registry using GPS coordinates | RMI  EHS  RMI |
| Getting lost | ENG: GPS enabled device  ENG: Communication device  ADM: Training on GPS  ADM: Training on communication device  ADM: Communication plan |  |
| Weather related hazards | ENG: Shelter  ADM: Dress for weather  ADM: Monitor weather- specify website  ADM: Survival training |  |
| Wildlife related hazards - specify |  |  |
| Terrain related hazards/ natural disaster - specify |  |  |
| Other: |  |  |

# OUTDOOR ACTIVITIES

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Exposure to Elements** | UC Requirements | ADM: Field Safety Training  ADM: [The Red Cross First Aid App](https://www.redcross.ca/training-and-certification/first-aid-tips-and-resources/first-aid-app) | EHS  EHS |
| Heat/Sun  Heat stroke/sun stroke, heat exhaustion, sun burn  Strong sun/UV exposure  dehydration | ENG: Shelter or shade  ADM: [Government of Alberta Working in Extreme Temperatures](https://www.alberta.ca/working-extreme-temperatures.aspx)  ADM: Carry drinking water, water filtration device  ADM: Sunblock, sunscreen, hat, sunglasses, long sleeves  ADM: Take frequent breaks  Other: Specify |  |
| Cold  Frost bite, hypothermia, dehydration | ENG: Shelter  ADM: [Government of Alberta Working in Extreme Temperatures](https://www.alberta.ca/working-extreme-temperatures.aspx)  ADM: [Winter Hiking Gear and Clothing](https://sectionhiker.com/recommended-winter-day-hiking-gear-list-2021-2022/)  ADM: Layer clothing  ADM: Schedule breaks  ADM: Carry water, energy bars  Other: Specify |  |
| Snow and ice  Slip trip fall, avalanche | ENG: Walking poles to test ice and snowpack  ADM: Walk like a penguin  ADM: Avalanche training  ADM: Locator beacon  PPE: Ice cleats, boots with treads  Other: Specify |  |
| Rain  Hypothermia, flooding, drowning | ENG: Shelter  ADM: Monitor weather forecast specify website  ADM: [Government of Alberta Thunderstorms, Lightning, Heavy Rain and Hail](https://www.alberta.ca/thunderstorms-lightning-heavy-rain-and-hail.aspx)  PPE: Rain gear, umbrella  Other: Specify |  |
| Electrical storms  electrocution | ENG: Shelter  ADM: [Government of Alberta Thunderstorms, Lightning, Heavy Rain and Hail](https://www.alberta.ca/thunderstorms-lightning-heavy-rain-and-hail.aspx)  ADM: Monitor weather forecast specify website  Other: Specify |  |
| Wind- flying debris | ENG: Shelter  ADM: [Government of Alberta Thunderstorms, Lightning, Heavy Rain and Hail](https://www.alberta.ca/thunderstorms-lightning-heavy-rain-and-hail.aspx)  ADM: Monitor weather forecast specify website  Other: Specify |  |
| Natural Disaster  Hurricane, Tornado  Earthquake,  Volcanic Eruption  Death or injury | ENG: Shelter  ADM: Register with travel registry  ADM: Monitor weather forecast specify website  ADM: Go-no go  Other: Specify |  |
| Forest fire/Wildfire/smoke/dust storm  Air quality, aggravated existing medical conditions  Heat, burns  Reduced visibility  Emergency evacuation, detours | ADM: Monitor air quality website- specify website  ADM: Monitor forest fire website- specify website  ADM: Monitor road closure website- specify website  ADM: Medication for existing conditions  ADM: Buddy system or travel as a group  ADM: Follow evacuation orders or plan  ADM: Go-no-go  PPE: N95 mask  Other: Specify |  |
| Exposure to toxins, allergens | ADM: Medication for existing conditions (asthma, allergies)  ADM: Buddy system or travel as a group  ADM: Seek medical aid as necessary  Other: Specify |  |
| **Exposure to Wildlife, insects, etc.** | UC Requirements | ADM: Field Safety Training  ADM: [The Red Cross First Aid App](https://www.redcross.ca/training-and-certification/first-aid-tips-and-resources/first-aid-app) | EHS  EHS |
| Wildlife Encounters  Bear, cats, wolves, coyotes  Large ungulates  (Intended and unintended) | ADM: Refer to Unintended Wildlife Encounter Risk Matrix  ADM: Emergency response plan for wildlife studies in event of aggressive animal encounter  ADM: Travel in groups/buddy system  ADM: Hire local guide or expert  ADM: Monitor for sign and behaviour  ADM: Proper food and waste storage  ADM: Make noise  ADM: Use deterrent if trained-check expiry date  ADM: Report bear sightings to appropriate authorities  Other: Specify | EHS |
| Other Dangerous Wildlife (exotic) | ADM: Engage a local guide  ADM: On site briefing and education |  |
| Hanta virus (mouse feces) | ADM: Avoid disturbing mouse feces  ADM: Spray feces with water prior to disturbing  PPE: N95 mask (for mouse feces clean up) |  |
| Ticks- Lyme Disease  Mosquitos- West Nile Virus  Black fly, deer fly  Fleas, lice | ADM: Wear long pants and long-sleeved shirt  ADM: Avoid standing water, marsh and bog areas  ADM: Apply insect repellant  ADM: Mosquito netting  Other: Specify |  |
| Bee and wasp sting  Allergic reaction | ADM: EpiPen/antihistamine |  |
| Giardia, E. Coli | ADM: Carry drinking water  ADM: Water filtration device  ADM: Proper hand hygiene  ADM: Do not drink water from steams, rivers, or lakes  Other: Specify |  |
| **Hiking** | Fall from heights, cliff edge, drop off, narrow or limited egress | ADM: Avoid narrow passages, extreme heights, cliff edges, overhangs, cornices, etc. ADM: Tie off  ADM: Control zone  Other: Specify |  |
| Difficult/uneven terrain slippery walking surfaces/ loose rocks slip trip fall | ADM: Appropriate footwear ADM: Walking poles ADM: Situational awareness  ADM: Fit for task  Other: Specify |  |
| Falling objects | ADM: Avoid areas of falling rocks or debris  ADM: Seek shelter during high winds  ADM: Be aware of surroundings  PPE: Helmet  Other: Specify |  |
| Getting lost | ADM: Travel in group  ADM: Use buddy system when separated from group  ADM: Communication plan  ADM: Missing person / lost contact plan  ADM: GPS enabled device, navigation device  ADM: Training on GPS enabled device, navigation device  ADM: Signal for help (smoke, flare, whistle, call)  Other: Specify |  |
| Injury to self and or others  Exposure to toxic plants | ADM: Avoid poison ivy, nettle, etc.  ADM: Certified first aider- see requirements  ADM: First aid kit – see requirements  ADM: Shelter  Other: Specify |  |
| **Camping** | Wildlife encroachment | ADM: Refer to Unintended Wildlife Encounter Risk Matrix  ADM: Follow proper food and waste storage practices (no food or waste in tents)  ADM: Buddy system  ADM: Implement wildlife watch/monitoring |  |
| Fire | ADM: Keep fire pit away from structures  ADM: Access to water  ADM: Do not leave fire unattended  ADM: Clear camp area of debris |  |
| Wind | ADM: Secure tents  ADM: Keep camp area free of debris  ADM: Collect and secure waste appropriately |  |
| **Extreme Sports / Extreme Terrain**  (rock climbing, mountaineering, ice climbing, etc.) | Personal injury  Injury to others  Slip trip fall  Loose rocks, falling ice, avalanche, mudslide, etc. | ADM: Contact RMI (insurance)  ADM: Contact EHS (hazard assessment)  ADM: Activity specific training and competency requirements)  ADM: Register with travel registry using GPS coordinates | RMI  EHS  RMI |
| **Water Related Activities**  **Specify activity**  (boating, swimming, snorkeling, scuba diving, water collection, wading, etc.)  **Specify type of body of water**  (creek, river, lake, ocean, winter run off, waste water system, etc.) | UC Requirement | ADM: Contact RMI (insurance)  ADM: Contact EHS (hazard assessment) | RMI  EHS |
| drowning | ADM: Swimming skill assessment, competency, ADM: Supervision  ADM: Buddy system  PPE: Personal floatation device |  |
| Fast moving current  High water  Debris in water  Drowning  Swept away by current | ADM: Go-no-go  ADM: Visual inspection of waterway  ADM: Supervision  ADM: Buddy system  ADM: Tie off to shore, restricted parameter  PPE: Hip waders, waterproof boots  PPE: Personal floatation device |  |
| Soft or unstable banks /shoreline  Falling  Drowning  Swept away by current | ADM: Go-no go  ADM: Buddy system  ADM: Tie off to shore  PPE: Hip waders, waterproof boots  PPE: Personal flotation device |  |
| **Working from Heights**  **Specify**  (Rock climbing, climbing trees, ladder work, etc.) | Personal injury  Falls  death | ADM: Contact RMI (insurance)  ADM: Contact EHS (hazard Assessment)  ENG: Fall restraint device  ADM: Fall Protection Program  ADM: Fall Protection Plan  ADM: Fall restraint training (contact EHS) | RMI  EHS  EHS  Supervisor  EHS |
| Fall from ladder | ADM: Ladder Safety Training | EHS |
| **Working Underground**  **Specify**  (Caves, confined space, limited access/egress, etc.) | UC Requirements | ADM: Contact RMI (insurance)  ADM: Contact EHS (hazard assessment)  ADM: Confined Space Entry Program  ADM: Confined Space Entry Training (approved vendor – IRWIN’S Industrial Safety) | RMI  EHE  EHS  EHS |
| Entrapment  Cave in / asphyxiation  Getting lost | ADM: Training and competency  ADM: Buddy system  ADM: Rope line  PPE: Helmet |  |
| **Ground Disturbance** | Contact with underground utilities | ADM: Ground Disturbance Program  ADM: Ground Disturbance 201 Training endorsed by Alberta Common Ground Alliance- approved vendor – Alberta Construction safety Association  ADM: Use approved contracted services | EHS  EHS |
| **Lifting and Carrying Loads** | UC Requirement | ADM: Industrial Ergonomics Training | SW |
| Muscle strain/sprain | ADM: Use of proper lifting techniques  ADM: Team lifting  ADM: Use of lifting aids (cart, dolly, etc.) |  |
| **Sporting activities**  **Specify**  (Team sports, biking, skateboarding, etc. | Muscle strain/sprain  Slip trip fall  Over exertion/fatigue  Dehydration  Het stroke/heat exhaustion | ADM: Stretching exercises  ADM: Take breaks  ADM: Fit for participation  ADM: Access to fluids  ADM: Shelter from elements |  |

# RESEARCH RELATED ACTIVITIES (ANIMAL, HUMAN, OTHER)

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Animal Research**  Intentional contact with animals or encroachment of animal habitat  **Specify type of animal(s)**  (Small domestic animals, rodents, livestock, wildlife, birds, fish, etc.)  **Specify activity**  (Monitoring, tagging, tracking, etc.) | UC Requirements | ADM: IAUTP Training Certificate  ADM: Approved Animal Use Protocol  ADM: Park or site-specific permit (if required) | ARC  ARC |
| Bites, kicks, scratches  Trampled, crowded  Personal injury | ADM: Animal handling training and competency  ADM: Teamwork (do not work alone with large animals)  ADM: Training and proper use of chutes/processing equipment  ADM: Use of tranquilizers  ADM: Standard Operating Procedure  ADM: Stick or prod to maintain distance  ADM: Barrier between self an animal  PPE: Safety footwear, safety eyewear, gloves  Other: Specify |  |
| Aggressive or defensive Wildlife encounter | ADM: Wildlife and wilderness awareness training  ADM: Standard Operating Procedure  ADM: Emergency response Plan  ADM: Teamwork  ADM: Report to authorities if required/appropriate  Other: Specify | EHS |
| Zoonotic disease | ADM: ADM: animal handling training  ADM: Post exposure protocol  ADM: First aider and first aid kit on site  PPE: Bite resistant gloves |  |
| Other: specify |  |  |
| **Human Research**  **Specify setting**  (Clinic settings, community setting, private homes, etc.) | UC Requirements | ADM: Ethics Training  ADM: Harassment Policy  ADM: Harassment and Violence Program  ADM: Harassment and Violence Awareness Training  ADM: Communication Plan | VPR  HR  EHS  EHS  Supervisor |
| Harassment, bullying, violence, hostile behaviour | ADM: Site specific training  ADM: Standard Operating Procedure  ADM: Emergency Response Plan  ADM: De-escalation training  ADM: Buddy system  Other: Specify |  |
| Language barriers  Cultural barriers | ADM: Use of local guide  ADM: Cultural awareness training  Other: Specify |  |
| Exposure to addiction, mental health and emotional health challenges, inappropriate behaviours | ADM: Situational awareness, aware of surroundings  ADM: Naloxone training  ADM: Naloxone kit on site  ADM: Respectful behaviour  ADM: Supervision  ADM: Buddy system, teamwork  Other: Specify |  |
| Exposure to pre-existing physical or medical needs | ADM: Industrial Ergonomics Training  ADM: Patient transfer training  ADM: Situational awareness, aware of surroundings  ADM: Respectful behaviour  ADM: Teamwork, buddy system, supervision  Other: specify | SW |
| Other: specify |  |  |
| **Other: Specify** |  |  |  |

# HUMAN BEHAVIOUR (WORKING WITH OTHERS, WORKING ALONE)

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Field schools**  **Field trips** | * General health and safety * Provision of instruction and guidance * Oversight and adherence to guidelines * Authority and reporting structure * Emergency response | ADM: Supervision to include instructor of record or sessional instructor or contracted industry guide  ADM: number of supervisors / leaders / program Assistants / responsible adults and TAs should be appropriate for group size, location and/or activity related hazards  ADM: Supervision requirements for high-risk locations or activities at the discretion of the Department Head / Faculty Leadership / trip approver  ADM: All supervisors / leaders / Program Assistants / responsible adults / TAs must be certified in first aid and have completed all identified training  ADM: Volunteers must be registered with RMI | Supervisor |
| **Working in Groups**  **Teamwork**  **Working with or near Others** | Addiction  Emotional or mental health challenges and related behaviours | ADM: [Alcohol Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/alcohol-policy)  ADM: [Cannabis Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/cannabis-policy)  ADM: [Smoking Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/smoking-policy)  ADM: Respect in the Workplace  ADM: De-Escalation Training  ADM: Naloxone Training  ADM: Naloxone kit  ADM: Discuss expectations and accepted behaviours  ADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)  ADM: [The Working Mind/](https://www.ucalgary.ca/hr/wellness/wellbeing-worklife/workshops-programs/working-mind) The Student Mind  ADM: [Red Cross Psychological First Aid Training](https://www.ucalgary.ca/ActiveLiving/registration/Program/PFA?path=All_First-Aid-and-CPR)  ADM: [The Four Stages of Psychological Safety Behavioral Guide](https://uofc.sharepoint.com/:b:/r/sites/FieldSafety-Administration/Shared%20Documents/Administration/Working%20Documentation/The_Four_Stages_of_Psychological_Safety_Behavioral_Guide.pdf?csf=1&web=1&e=jf83pd) |  |
| Harassment, Bullying  Violence, Sexual Violence | ADM: Workplace Violence Policy  ADM: [Harassment Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/harassment-policy)  ADM: [Sexual and Gender-Based Violence Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/sexual-and-gender-based-violence-policy)  ADM: [Workplace Violence Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/workplace-violence-policy)  ADM: Harassment and Violence Program  ADM: Harassment and Violence Awareness Training  ADM: [Supervisor Resources](https://grad.ucalgary.ca/services/faculty-and-staff/supervisor-resources)  ADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)  ADM: [Government of Canada GBA Plus resources and training](https://women-gender-equality.canada.ca/en/gender-based-analysis-plus.html)  ADM: Discuss expectations, acceptable behaviour, and personal boundaries  ADM: Review how to report concerns  ADM: Model appropriate behaviour  ADM: Early intervention to correct behaviour issues  ADM: Red Cross Psychological First Aid Training  ADM: Appropriate Consent and Harassment Training (Student Wellness)  ADM: [The Four Stages of Psychological Safety Behavioral Guide](https://uofc.sharepoint.com/:b:/r/sites/FieldSafety-Administration/Shared%20Documents/Administration/Working%20Documentation/The_Four_Stages_of_Psychological_Safety_Behavioral_Guide.pdf?csf=1&web=1&e=jf83pd) | EHS  EHS  Supervisor  Supervisor  Supervisor  Supervisor |
| Individual Behaviours | ADM: [Code of Conduct](https://www.ucalgary.ca/legal-services/university-policies-procedures/code-conduct)  ADM: [Student Non-Academic Misconduct Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/student-non-academic-misconduct-policy)  ADM: [Student at Risk Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/student-risk-policy)  ADM: Develop a team charter  ADM: Develop team building activities  ADM: ADM: Review how to report concerns  ADM: Model appropriate behaviour  ADM: Early intervention to correct behaviour issues  ADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)  ADM: [The Working Mind/](https://www.ucalgary.ca/hr/wellness/wellbeing-worklife/workshops-programs/working-mind) The Student Mind  ADM: [Red Cross Psychological First Aid Training](https://www.ucalgary.ca/ActiveLiving/registration/Program/PFA?path=All_First-Aid-and-CPR)  ADM: [The Four Stages of Psychological Safety Behavioral Guide](https://uofc.sharepoint.com/:b:/r/sites/FieldSafety-Administration/Shared%20Documents/Administration/Working%20Documentation/The_Four_Stages_of_Psychological_Safety_Behavioral_Guide.pdf?csf=1&web=1&e=jf83pd) | Supervisor  Supervisor  Supervisor  Supervisor  Supervisor |
| Discrimination towards indigenous peoples, women, visible/racialized minorities, persons with disabilities, LGBTQ2S+ | ADM: HR resources  ADM: Office of EDI resources  ADM: [Workplace Accommodation Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/workplace-accommodation-policy)  ADM: [Supervisor Resources](https://grad.ucalgary.ca/services/faculty-and-staff/supervisor-resources)  ADM: [Government of Canada GBA Plus resources and training](https://women-gender-equality.canada.ca/en/gender-based-analysis-plus.html)  ADM: ADM: Review how to report concerns  ADM: Model appropriate behaviour  ADM: Early intervention to correct behaviour issues | HR  OEDI  Supervisor  Supervisor  Supervisor |
| Imbalance of Authority | ADM: Set clear expectations  ADM: Provide access and opportunity to communication  ADM: Define reporting structure  ADM: Practice open door policy  ADM: Provide avenue to voice concerns safely and without repercussion  ADM: Develop a team charter | Supervisor  Supervisor  Supervisor  Supervisor  Supervisor |
| Pre-existing physical limitations  Pre-existing medical (physical, emotional, mental health) conditions that may be impacted by activity or location  (Asthma, diabetes, allergies, etc.) | ADM: Assess fitness to participate  ADM: [Workplace Accommodation Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/workplace-accommodation-policy)  ADM: Encourage active disclosure of existing conditions that may be impacted  ADM: Encourage open dialogue  ADM: Create a safe space for disclosure and discussion  ADM: Model behaviour  ADM: Encourage disclosure on the required Emergency Contact Information Form | Supervisor  Supervisor  Supervisor  Supervisor  Supervisor |
| Fatigue  Work- Life Imbalance | ADM: Frequent breaks  ADM: Encourage work-life balance  ADM: Specify work hours  ADM: Provide opportunity for team building  ADM: Provide time for self- reflection | Supervisor  Supervisor  Supervisor  Supervisor |
| Cabin Fever, Isolation in remote locations, Homesickness  Depression, fatigue, anger, loss of appetite, inability to concentrate, avoidance of group activities, at Risk behaviours | ADM: Red Cross Psychological First Aid Training  ADM: [Student at Risk Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/student-risk-policy)  ADM: [Supervisor Resources](https://grad.ucalgary.ca/services/faculty-and-staff/supervisor-resources)  ADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)  ADM: Practice daily mental health check-ins  ADM: Provide access and opportunities to communicate with friends, family, etc.  ADM: Know how to report a concern  ADM: Research mental health resources for location and include in communication plan  ADM: Encourage open dialogue  ADM: Early intervention |  |
| **Exposure to disease, viruses, etc.** | Direct exposure to respiratory illness transmitted by respiratory droplets that are generated by a person who is coughing, sneezing, or talking. | ADM: Follow all location specific protocols regarding distancing, masking, etc.  ADM: Encourage vaccination  ADM: Verify mandated vaccination requirements for international destinations  ADM: Good hand hygiene- use of hand sanitizer and or frequent hand washing with soap and water  ADM: Practice respiratory hygiene covering cough or sneeze  ADM: Use masks when in close contact indoors, in vehicles, and in poorly ventilated spaces |  |
| Indirect exposure to respiratory illness on objects and surfaces | ADM: Good hand hygiene- use of hand sanitizer and or frequent hand washing with soap and water  ADM: Use disinfectant wipes to disinfect touch points daily  ADM: Avoid sharing of equipment and tools when possible  ADM: Avoid touching your face |  |
| **Working Alone** | UC Requirements | ADM: Working Alone Standard  ADM: Communication plan  ADM: UC Safety App  ADM: Communication equipment suitable for location  ADM: Training on communication equipment  ADM: Emergency Response Plan | EHS |
| Injury  lost | ADM: Avoid working alone in the field whenever possible  ADM: Lone Field Worker Emergency ID Armband  ADM: GPS or location device |  |
| Cabin Fever, Isolation Depression, stress, anxiety  Fatigue | ADM: Regularly scheduled check ins  ADM: provide wellness strategies such as journaling, yoga, exercise, etc.  ADM: Encourage work-life balance  ADM: Proper rest and nutrition  ADM: Emergency Response Plan  ADM: Know how to report a concern  ADM: Know how to access mental health support in the area (if available) |  |

For more information contact:

Environment, Health and Safety

E-mail| [ucsafety@ucalgary.ca](mailto:ucsafety@ucalgary.ca)

URL | [www.ucalgary.ca/safety](http://www.ucalgary.ca/safety)

University of Calgary

2500 University Drive NW

Calgary, AB, T2N 1N4